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REPEATERS IN THE UPPER GRAMMAR GRADES

EDWARD L. THORNDIKE
Teachers College, Columbia University

The question suggested by our title is important for several reasons, which will be made clear after the facts have been presented.

The facts are as follows: A "repeater" is, for our purpose, defined as a pupil who is reported by school officers (1) as doing the work of the grade for the second time, or (2) as having spent more than a year (or half-year in the case of systems with 14, 16, or 18 grades in the elementary school) in the grade. I have data from ten cities chosen at random as to the number of "repeaters" per hundred pupils enrolled in the case of each of the last three grammar grades (grades 6, 7, and 8 in eight cities; 7, 8, and 9 in one city; 5, 6, and 7 in one city). I have similar data in the case of each of the last two grades (6 and 7) in the eleventh city. For the average of the cities the number of repeaters per hundred pupils enrolled is:

In the second from the last grammar grade.....14.3
In the next to the last grammar grade.....12.6
In the last grammar grade.....12.4

For the median of the cities the number of repeaters per hundred pupils enrolled is:

In the second from the last grammar grade.....11.4
In the next to the last grammar grade.....11.8
In the last grammar grade..... 8.1

In view of the nature of the data I should estimate the central tendencies as 12.5, 11.5, and 9 for the three grades in order. Table I gives the facts in detail.

TABLE I

RATIO OF NUMBER OF "REPEATERS" TO TOTAL NUMBER OF PUPILS, FOR EACH OF THREE GRADES IN ELEVEN CITIES

School	Second from Last Grammar Grade	Next to Last Grammar Grade	Last Grammar Grade
Aurora, Ill.	.071	.065	.055
Chester, Pa.	.188	.179	.141
Decatur, Ill.	....	.118	.081
Galesburg, Ill.	.318	.263	.450
Jamestown, N. Y.	.096	.119	.088
Kansas City, Mo.	.224	.212	.127
New York City (a few schools only)	.148	.157	.073
Quincy, Mass.	.109	.092	.097
Springfield, Ohio.	.119	.043	.020
Wheeling, W. Va.	.052	.057	.037
Williamsport, Pa.	.102	.077	.075
Median	.114	.118	.081
Average	.143	.126	.124

The data are for October, 1909, except in the case of five cities. In Jamestown they are for December, 1909; in Galesburg they are for 1898; in Springfield they are for June, 1907 and 1908; in Williamsport they are for June 1907 and 1908; in Kansas City they are for June 1905 and 1907. For the data for 1907 in the last three cities I am indebted to Ayres, *Laggards in American Schools,* p. 74. For the data for Aurora, Chester, Decatur, Jamestown, Quincy, and Wheeling I am indebted to the superintendents of schools in those cities. For the New York data I am indebted to several principals of schools. The Galesburg figures are the proportions *of those promoted* who spent more than a year in the grade.

These facts disprove the opinions expressed or implied by Ayres and others that if a pupil fails of promotion in grades 6, 7, or 8 he is practically sure to be eliminated. On the contrary two-thirds or more of those failing of promotion in grades 6, 7, or 8, seem to continue in the grade. The percentage of pupils failing of promotion is known to be about 15 for grades 6 and 7

and 12½ for grade 8. The percentage of repeaters is, in our eleven cities, about 12.5 for grade 6, 11.5 for grade 7, and 9 for grade 8.

This rough estimate for cities in general can be checked by getting the actual percentage which the proportion remaining over a year is of the proportion failing of promotion in the same grade. I have data permitting the calculation of this percentage, subject to the chance variations of different years, for seven cities. The median results are that seven out of ten students failing of promotion in grade 6 or 7 continue in the grade, and five out of ten in grade 8. On the whole the most likely estimate seems to be that of the non-promoted in grades 6, 7, and 8, respectively, seven-tenths, seven-tenths,and six-tenths became "repeaters." The data are given in Table II. They are

TABLE II

PERCENTAGE WHICH THE PROPORTION REMAINING OVER A YEAR IN THE GRADE IS OF THE PROPORTION FAILING OF PROMOTION IN THE SAME GRADE DATA FOR LAST THREE GRADES IN SEVEN CITIES

School	Second from Last Grammar Grade	Next to Last Grammar Grade	Last Grammar Grade
Chester, Pa	55	66	35
Jamestown, N. Y	107	85	29
Kansas City, Mo	80	85	75
New York, N. Y.*	98	98	44
Springfield, Ohio	68	39	45
Williamsport, Pa	70	77	79
Wheeling, W. Va	27	26	46
Median	70	77	45

*One school only.

inadequate for any one city, not only because the proportion remaining over a year had to be in some cases from a different year than that from whose record the proportion failing of promotion was found, but also because demotions, trial promotions, and the like greatly complicate the records. For example, the number failing of promotion in the first grade is in one city recorded as 50 per cent., or three times the number repeating that grade (.185). Of course there were not really 31.5 per cent. who fai ed of promotion but did not repeat the grade. This

city reports only 27, 26, and 46 per cent., respectively, of the non-promoted in grades 6, 7, and 8 as repeating the grade, but it reports only 35, 60, 55, 51, and 25 as corresponding percentages for grades 1 to 5. So it would be absurd to conclude that in that city the great majority of those failing in grades 6, 7, or 8 leave school before the next November. If one did he would have to conclude also that half of the pupils failing in grades 1, 2, or 3 left school before the next November!

Though thus inadequate for any one city, the data give a result for the median of the seven cities which, though probably too low and very unreliable, is very much more reliable than any person's guess. It is therefore a very valuable check on the more roundabout result for the eleven cities.

So far then as the facts reported by school officers go, *the pupil who fails of promotion in grades 6, 7, 8 is almost as likely to continue in school as the pupil who is promoted.* Roughly he is, by our records, nine-tenths as likely to do so. For, of all the pupils in grade 6 or grade 7, only four-fifths continue to the next grade; while of all the pupils in the last grammar grade the percentage continuing is probably even lower.

As I have elsewhere stated emphatically, the mass statistics of school reports need to be supplemented by individual educational histories. The facts of elimination, retardation, extra promotions, repetitions of grades, and the like can be measured adequately only by such histories of individuals. And I am fully aware of the complexities, inconsistencies, and ambiguities of school records. But the reports concerning the number of children repeating the last three elementary school grades, even after full allowance is made for possible errors, show three facts beyond a doubt:

First of all, retardation is seen to be an important feature of the late as well as the early grades. It has been shown elsewhere that the percentages of failure of promotion are as great for late as for early grades, with the exception of grade 1. The data reported in this article show that these pupils are not saved from retardation by the worse fate of immediate elimination. As a

matter of fact the same pupil is *more likely* to be retarded in the late grades than in the early.

Secondly, to estimate the number of pupils who continue to any given late grade it is not correct to divide the enrolment of that grade (say grade 6) by the number of pupils beginning should in one year six or so years before. The dividend should be the number of pupils beginning that grade in one year. This will be, on the average, only seven-eighths of the enrolment for grade 6, eight-ninths for grade 7, and nine-tenths or ten-elevenths for grade 8. The estimates made by Ayres of the number of pupils continuing to grade 6 and beyond are thus much too high. The objections which have been made to the estimates in the United States Bureau of Education Bulletin on *The Elimination of Pupils from School* on the ground that failure of promotion and consequent repetition of a grade are far more frequent in grades 2, 3, and 4 than in grades 6 to 11 are shown to be without foundation in fact.

In the third place, the facts show that in so far as failure of promotion is an adequate measure of intellectual dulness, the retention of pupils in grades 6, 7, or 8 is not at all highly selective for intellect. Failure of promotion is, of course, far from a perfect measure of dulness; and nothing like an exact measure of the extent to which the more gifted pupils in grade 6 continue in school to grade 7, the more gifted in grade 7 to grade 8, and so on can be made from present knowledge. But the rate of progress in school is correlated with intellectual gifts to some degree, and the so frequent continuance in school in the last three grammar grades by pupils who fail of promotion is significant. The facts reported here certainly could not exist if the length of a pupil's continuance in school paralleled at all exactly his intellectual ability.

On this important question of the nature of the selection for continuance in school and college we have far too few facts. They are substantially the following: (1) The relative proportions of children of different ages in the different grades through to college graduation show that the children who reach a given grade (after the first two or three) at a late age are likely to

leave school earlier than the others. This can be proved to be the case for age at entrance to grades 3, 4, 5, or 6 and probably holds for grades 7–12, and even for college classes. But in view of the facts reported in this paper slow progress in the last three grades does not seem to have so great an eliminating force as slow progress in earlier grades. (2) Dearborn has found a rather slight relation between continuance to high school and scholarship (as tested by marks) in late grades of the elementary school. (3) Several school officers have reported the opinions of teachers concerning the causes why pupils leave school. By these opinions intellectual inferiority is a real, but by no means an exclusive, cause.

At present we have some rough idea of how many pupils continue to any grade up through high school, how many fail of promotion in that grade, and how many stay in that grade for more than a year. But we know almost nothing about the qualitative questions: What sort of pupils continue to this grade? What sort of pupils fail of promotion in it? What sort of pupils stay to repeat it? The educational life-histories of individual pupils must be studied if these questions are adequately to be answered.

THE FINE AND INDUSTRIAL ARTS IN ELEMENTARY SCHOOLS, GRADE VII

WALTER SARGENT
The University of Chicago

The stimulating sense of increased ability to hand'e materials and implements which comes only when work has been so organized in previous years as to give some degree of mastery along specific lines of manual arts is a strong supplement to the urge of the widening interests apparent in Grade VII.

In representation pupils who have learned to picture the general characteristics of objects, to draw with some degree of care, by thinking out the positions which lines and brush strokes should occupy, before instead of after making them, and who have attempted to portray effects of three dimensions, are now interested in gaining increased ability to make satisfactory drawings. This becomes evident in a desire to represent details with greater accuracy and to picture effects of distance and solidity so the results look like the object. The children appreciate the power to picture a book as lying flat, or a bowl as appearing to be round, or a house as showing its structural features and its apparent size.

In constructive work the pupils are sufficiently mature to undertake some simple individual projects and to appreciate standards of workmanship. Awakening aesthetic appreciation of beauty of proportions and outlines, and of fitness to purpose enables the pupils to use design understandingly in relation to their constructive work and to their school and home surroundings.

The following suggestions are offered regarding the phases which may appropriately receive emphasis in Grade VII.

Representation.—The use of drawing as a means of explanation and description in connection with other school subjects

should continue to be an important part of the work. This illustrative drawing offers to the teacher an excellent means of judging the extent to which drawing has become a practical means of expression. It plainly indicates the particular points in which the work is strong and the phases which require more skill and knowledge.

The drawing should be so conducted that there is the maximum of observation and interpretation on the part of the pupil. Ability to draw grows as the pupil compares his drawing with the object or idea and discerns points of likeness and difference so clearly that he knows where his drawing needs alteration and where it does not.

Too often this sort of observation is made by the teacher, who thus unwittingly obtains the practice in comparison of visual images while the pupil receives only the results in verbal terms. The possibilities of observation on the part of the pupils should be utilized to the full. If the lesson is in object-drawing, after the pupils have carried their drawings as far as possible by their own study they may exchange seats and drawings and give to each other the results of the new impressions thus obtained.

Those who persistently make their representations of objects too long and narrow may be seated beside those who have the habit of making drawings which are too short and broad. Those who are representing approximately the same view of an object may place their drawings side by side and compare results.

Some such methods as these will usually give a fresh impetus to observation which has begun to flag, and pupils who are trying to work out a certain pictorial effect will have the value of the impressions and suggestions of others after they have utilized to the full their own powers. One has only to teach drawing classes to find out how great is the temptation for the instructor to do the greater part of the observation which the children should undertake, and to point out the things which they should discover for themselves or for each other.

Experiments seem to show that better progress is made when pupils learn to draw a few things fairly well than when they pass rapidly from one object to another with no gain at each step

which relates definitely to that which follows. Thoroughness of mastery at this age is likely to be in inverse ratio to the number of different subjects undertaken.

The cumulative effect of a series of efforts to understand and represent a single object will be evident in some such succession of drawings as the following, where the attention at each step is concentrated upon a single aspect of the thing under consideration, thus defining the problem in the mind of both instructor and pupil, and furnishing a goal for effort and a standard of judgment.

In nature drawing, for example, suppose the topic to be a tulip.

1. Draw with brush and ink to represent with a few lines the growth and general character. Here the whole attention is focused upon the interpretation of the important characteristics. Details are of secondary importance. The movement of the long lines, and the main features of growth are the things to be expressed. The shadow of the plant helps interpret these. Comparison with the shadows of other plants emphasizes the individuality of each and helps to a better appreciation of that of the flower which is being studied (Fig. 1).

2. With a pencil sharp and hard enough to record facts, make careful drawings of details, such as the exact shape of a petal, the construction and outline of a flower and leaf and the fine curvature of a stem. Make blue-prints of the leaves and flowers so as to see a perfect interpretation of these forms. The purpose of these drawings is not primarily an artistic result but an accurate record of such facts as would be used for a science notebook, and which incidentally furnish excellent material for use in design (Fig. 2).

3. Sketch parts of the plant and color them so as to show the exact hue of petals, stem, upper and under side of leaves, etc.

4. Study and represent a flower and a leaf in different positions and turned at different angles (Fig. 3).

5. Make a completed drawing of the plant in pencil and in color.

6. Use the plant forms as elements in design (*a*) in a border

for embroidery, (*b*) in a surface pattern for wall paper, (*c*) in a single unit for a cover for nature-study papers.

A similar opportunity for concentration upon a single topic for a considerable period of time is found in landscape drawing in connection with geography. Suppose the country under consideration is Holland. A large drawing may be begun upon

FIG. 1

the board and this may be modified or added to from time to time as the children obtain additional data or more definite knowledge of the subject-matter. Meanwhile each child may start a drawing of his own on a sheet of paper.

At first perhaps the results may be meager and include only a few suggestions of the country, such as a horizontal line to represent its level character and crude suggestions of canals and windmills. Collections of pictures and the hints gathered from

descriptions will immediately furnish new material. One group of pupils may be assigned to gather pictures of canals and learn how to represent them so they appear to stretch away into the distance. Another group may collect data regarding the appear-

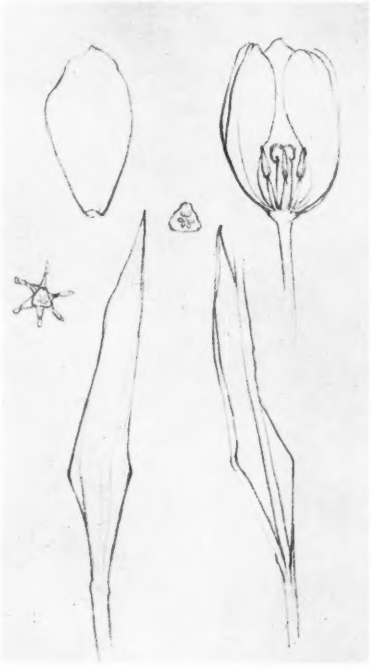

FIG. 2

ance of windmills, and still others may study canal boats, houses, and other items relating to Holland.

Day by day the picture on the board will grow and crude drawings be replaced by those which are more adequate because of the continued study. The individual sketches will give opportunity for original compositions. Children will be encouraged to practice on particular objects or effects until they have mastered

them. The geography thus furnishes a subject for the drawing, and that in turn is of value to the geography.

The children in Grade VII should develop increased ability to represent three dimensions in terms of only two, so that the solid objects which they draw upon the flat paper shall appear

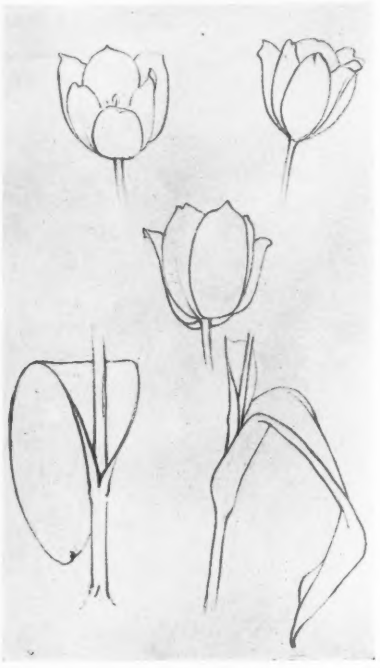

FIG. 3

as solid. This ability is best gained by supplementing the drawing from objects, with much experimental drawing from memory, in which the pupil learns to represent several objects, for example, a tumbler, half-apple, and box, illustrating the more common typical forms of solidity, cylindrical, hemispherical, and rectangular, until he can picture these in any position he chooses without reference to the object.

He should construct such forms on paper with his pencil over and over again, comparing and modifying them till their appearance satisfies his eye. He should do this till he forgets that he is working in two dimensions, and feels that he is shaping these forms in all three. He should not think of his foreshortened circle as an ellipse but as a circle which extends back into the picture and which he shapes until it is a satisfactory picture of a circle lying flat. He should build up his rectangular solids from imagination till his eye can detect any false construction or any shape that does not carry the impression of rectangular solidity. He should play with these figures till he can place them in whatever position he chooses. Modeling similar objects in plastic material is a valuable aid in developing power to draw them.

The old system of drawing type forms by carefully formulated principles of perspective failed partly because it attempted to train the intellect to reason out how objects appear under given conditions, while the important thing at this age is capacity for immediate visual satisfaction with what looks right without the necessity of referring to the intellect for confirmation. Statements of principles are valuable later on but as ordinarily taught do not seem to be of much practical help at this age.

One can seldom draw well an object the general type of which he has not mastered and made his own so he can draw it readily from imagination.

Construction.—The industrial work suggested for Grade VI is still more valuable in Grade VII. Among the projects suited to the abilities of the children are portfolios, letter files, and simple forms of bookbinding required in the making of sketch books, memoranda, and the binding of reference material gathered from magazines, etc., by teachers and pupils. The local needs will usually suggest the best problems.

In woodworking during Grade VI the pupils should have gained a practical acquaintance with the different saws and planes, with the rule, try square, gauge, spokeshave, hammer, nail set and sandpaper. The models attempted should have been such that their usefulness is not greatly impaired by inaccuracies

in form and measurements—the pen-tray, for example, may have reached its final stage somewhat narrower or shorter than original'y planned, but this result is not so serious as would be the case with a table leg which must correspond exactly with three others.

A wise choice of models at the first enables the teacher to encourage freedom in the use of tools and to give the pupils a sense of achievement. The freedom and re'ative crudity of some of this work should not be confused with carelessness. The wide difference between the inaccuracy of a first attempt and slovenly work should be recognized.

In Grade VII the pupils should learn to use with some degree of skill the tools with which they have become acquainted during the previous year. The models should be such as make a greater demand for accuracy. The pupils should experience the sense of achievement that comes from producing from raw material well-constructed objects that are of some practical use. The construction work of Grade VII should be such as will bring both boys and girls into increasingly close relation with the occupations of home and community, and should satisfy the desire to be connected with the activities of the world and to do things which have social value. Cooking and serving meals, making garments which are to be worn, planning, as constructive prob'ems in bench work, objects which are of use in school or at home, contribute to this end.

The children should know something of the historical and artistic evolution of industries, particularly those relating to their own constructive work and to local occupations, such as agriculture, building, iron- and woodwork, etc. They should know something of the great amount of thought and effort which have been expended in evolving the forms in which common things now appear. The stories of pottery and furniture and clothing are as full of interpretation of human thought and of the progress of civilization as stories of military campaigns. Such a treatment of history wou'd add something more than a commercial interest to industrial products.

Excellent suggestions for various forms of industrial educa-

tion for country schools are to be found in the report of the committee of the National Education Association, July, 1905, upon "Industrial Education in Rural Communities."

Design.—In Grades VII and VIII the phases of design which call for judgment regarding the fitness of things and the beauty of proportions and outlines and the suitability of ornament are of increasing importance. The problems of constructive work are also excellent prob'ems in design. The children should be brought up with the idea, impressed by example rather than precept, that the possibilities for beauty lie mostly in the planning and proportioning of essential parts of objects and not in added ornament. The finest beauty of a boat is its shape and not its decoration; of a chair, its proportions and not its carving. No element can add more beauty to the outside appearance of a house than the fine proportioning and spacing of doors and windows. Walter Crane states this principle well when he says,

> Nothing has degraded the form of common things so much as a mistaken love of ornament. . . . . Decoration or ornament we have been too much accustomed to consider as accidental and unrelated addition to an object, not as an essential expression and organic part of it; not as a beauty which may satisfy us in simple line, form, or proportion combined with fitness to purpose, even without any surface ornament at all.[1]

Children are readi'y interested in making designs where the solution lies in the best possible disposition of necessary constructive elements with little or no ornamentation, and soon appear to enjoy such a problem partly because of the definiteness produced by its limitations. The lesson covers in Fig. 4 designed by elementary-school children, illustrate the different results obtained when the possibilities for good design in fine arrangement of parts are rea ized and when they are not. In *B,* (Fig. 4) the child without any foundation of previous training was left free to make his design as he pleased. He has not responded to the vertical and horizontal suggestions of the enclosing space but violates these with his diagonal printing. He finds no pleasure in experimenting with the architectural effects of fine

[1] Walter Crane, *The Bases of Design,* 90.

spacing and well-arranged margins. His primary interest is the barbaric one of collection and display with only secondary regard for arrangement. There is no lasting satisfaction and no c'early defined goal for this interest. It demands ever brighter colors and more profuse ornamentation.

Such designs as *A* in Fig. 4 result from long experience in placing words where they divide the space most pleasingly, and

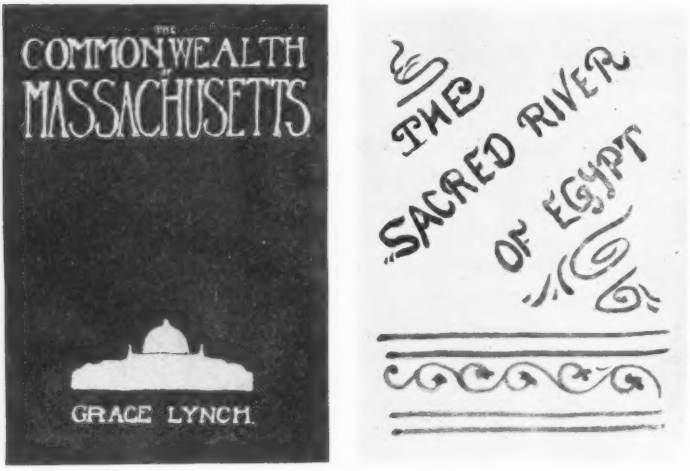

FIG. 4

in spacing letters in the words till satisfaction is awakened in the harmonious distribution of the words on the page and the letters within the words, rather than the profuse ornamentation.

In such a design as this the exact areas which the printing is to occupy are first chosen and the letters made to conform to these. Children show much interest in working out this problem. They like to experiment by printing the same word in rectangles differing entire y as to proportions, so that in each case the word shall exactly fill the given form (Fig. 5). Such printing should l.e done freehand and the spaces determined not by measurement but by tentative indications made at first by very light lines and gradual'y defined as the letters become equably distributed.

For excellent suggestions for teaching lettering see a series of articles by Mr. James Hall in the *School Arts Book,* 1909–10, and an article by Mr. Harold Haven Brown in the *Year Book* of the Council of Supervisors for 1906 entitled, "The Teaching of Lettering."

Design which consists in the best possible arrangement of given elements, so that they fulfil their purpose adequately and gracefully without recourse to sensational or incongruous interests, gives permanent satisfaction in a definite end attained and a single idea perfected. Thus is produced a thing of beauty which is "a joy forever."

FIG. 5

Development of a feeling for beauty of form comes in part by the careful drawing of plant forms suggested for nature drawing, but this should be supplemented by practice in securing a freedom of style, which can be gained by making many free sketches of plant forms with a brush. The plant should be interpreted into as few lines as possible and this convention repeated till, like penmanship, it gains a swing and flow of line that is not labored. The best of the results may be worked over and perfected by the use of tracing paper.

Continued use of water-colors develops ability to match colors more exactly. The children should be expected to distinguish and record relatively subtle differences in color tones, such as the difference between the green of the upper and that of the under sides of leaves. In addition to practice in matching colors, a special study of color intensities will aid discrimination. This may be done by having the children select some color, for example, blue, and paint a spot as intensely blue as the paints will produce, and another spot of gray which is the same value as

the blue, that is, neither lighter nor darker, but such a gray as would be obtained by photographing the blue with a plate that rendered the colors in their true relative values.

Have them paint other spots, each time mixing an increasing amount of gray with the blue, so that the spots approach gray without becoming lighter or darker. Let them select from these spots three which make equal steps in intensity between pure blue and gray and cut and mount samples from these to put with the blue and gray so as to form a series of five equally graded steps of intensity. In a similar manner make charts of the other five spectrum colors. Have the children use these charts to show the relative intensity of colors in nature which they are attempting to match.

The study of good pictures, which is of value in all grades, becomes of increasing importance in Grades VII and VIII because of the greater possibility for aesthetic appreciation which becomes evident then. Details of picture study suitable to both these grades will be discussed in the next article.

A reasonable standard of attainment has been reached at the end of the seventh year if the children have developed skill and sureness in the lines in which they are working, so that in drawing, the general character of objects can be shown by a confident rapid sketch and the details truthfully recorded in a careful drawing; in constructive work if the tools can be handled rapidly and with certainty resulting from much practice; and when in the field of design, there appears increasing pleasure in objects well planned and constructed from a utilitarian standpoint and finely proportioned and shaped from the standpoint of formal beauty.

THE DEVELOPMENT OF METHODS IN TEACHING MODERN ELEMENTARY GEOGRAPHY

C. A. PHILLIPS
Warrensburg State Normal School, Warrensburg, Missouri

INTRODUCTION

Since 1600 modern school geography has passed through three distinct periods. First, geography is a study of charts and maps for the purpose of locating land and water forms. These early geographies also included a considerable body of descriptive matter relating to these typical land and water forms, and in addition to these descriptions, some statements are made about the plants, animals and races of men. It is probable that this early geography grew out of the ancient astronomical geography which had been taught in the universities for centuries. At any rate this unorganized, unscientific type of geography prevailed till about 1800.

In the second period, physiography is made the important factor underlying geography. This change occurs after Ritter begins the study and teaching of geography in the University of Berlin. In his theory and teaching, geography is made a science which treats of the earth and its inhabitants, and very soon his theories are adopted in both Europe and America. Moreover, they continue to be dominating ideals till the close of the nineteenth century.

The third period may be called the period of industrial or economic geography. During the last decade we have heard a great deal about this form of geography—this is a perfectly natural tendency in that it is taking some of the emphasis off the physiographical aspects of geography and putting more on the problems growing out of human relations.

The paper will take up in turn these periods, devoting a brief discussion to the early period which will include the deve'opment

of methods as they grow out of Pestalozzi's experiments supplemented by those of his disciples. A much larger place will be devoted to the discussion of Ritter's theories and the practice growing out of them. His influence will be traced directly through his own teaching and that of his pupils and followers. Finally a brief discussion will be undertaken of the present situation with regard to the attempts to make industry the basis of geography. The plan is to take up the development of method as it goes on in Europe first, and then trace the development for the United States. In both cases the discussion will follow the periods which have been noted above.

I. THE DEVELOPMENT OF METHODS OF TEACHING GEOGRAPHY IN EUROPE

1. *Place and Book Geography*

To show that this type of geography prevailed during the seventeenth and eighteenth centuries it is only necessary to take up the writings of some of the more important reformers during these centuries. We find all the reformers protesting against the study of such geography, and most of them offer suggestions as to what they think should be taught instead of the material that is being used.

Comenius (1592–1670) was among the first to advocate a change to a more rational method of study and the selection of more valuable material for that study. He suggests that the child should get very early a good knowledge of natural things, such as plants, trees, flowers, sand, clay, the cow, the horse, and the dog. He says, "In the fourth and following years the child should be taken into the fields and along the rivers and should travel to observe plants and animals, running water, and the turning of windmills."[1] Further, he thinks the study of geography should begin at the cradle. At once the child should be taught direction, location, and distance of the parts of the house, such as the nursery, kitchen, bed-chamber. Very early, too, the children should have much outdoor observation in geography, namely, visits to orchards; should be taught to find their way along the streets, and learn where their friends and relations live.

Rousseau (1712–78) thought the geography of his time was practically worthless, for it consisted only in the formal study of globes and maps which inadequately represented the important things needed by Emile. He insisted that Emile should begin the study of geography by getting a correct knowledge of his immediate neighborhood and if any maps were to be used they should be drawn by the child. He thought mere names of places and facts were of no value, but that objects should be studied first-hand, as a matter of experience.[2]

Pestalozzi (1746–1827) was another of the reformers whose indirect influence on the method of teaching geography was very great, though he knew very little about the subject himself. DeGuimps says:

> The first elements of geography were taught us from the land itself. We were first taken to a narrow valley not far from Yverdun, where the river Buron runs. After taking a general view of the valley we were made to examine the details until we had obtained an exact and complete idea of it. We were then told to take some of the clay which lay in beds on one side of the valley and fill the baskets which we had brought along for the purpose. On our return to the castle we took our places at the long tables and reproduced in relief the valley we had just studied, each one doing the part which had been allotted to him. In the course of the next few days more walks and more explorations, each day on higher ground, and each time with a further extension of our work. Only when our relief was finished were we shown the map which by this means we did not see till we were in a position to understand it.[3]

This is home geography, *Heimatskunde,* which according to Monroe was one of the striking Pestalozzian innovations. However, when we read Barnard's account[4] of the methods of instruction advocated by Pestalozzi we are forced to conclude that he was after all not far from place and book geography. For example, Pestalozzi says:

> Thus, for instance, one of the subdivisions of Europe is Germany. Let the child first become acquainted beyond the power of forgetting them with the subdivisions of Germany into ten circles. Now let the names of the cities of Germany be laid before him in alphabetical order to be read; there being at the name of each city a number of the circle in which it lies. As soon as he can read the names of the cities fluently let him be

shown how the numbers annexed to them refer to the heads above and the child will after a few lessons be able to locate all the cities of Germany according to the heads thus set above them. Let there be put before him, for instance, the following German places, with figures: Aachen[8], Aalen[3], Abendburg[4], Acken[10], etc. Then the pupil will read as follows: Aachen is in the Westphalian circle, Abendburg is in the Franconian circle, etc.[4]

Krüsi, in discussing the application of Pestalozzi's methods, says:

In his efforts to systematize geography, Pestalozzi seems to have violated the principles of a sound system of instruction. This resulted from an undue attention on the alphabetical end, and therefore arbitrary arrangement of geographical names, which he wished to impress upon the mind, or rather upon the memories, of the pupils. He evidently had not at that time a correct conception of the true office and purpose of geography.[5]

This confirms the view that Pestalozzi's contribution in the matter of method in teaching geography was indirect, growing out of his principles of education, rather than directly stated or practiced in any of his teaching. His work consisted in giving the point of view and inspiration for such men as Krüsi, Niederer, Plaman, Tobler, Zeller, Fellenberg, von Raumer, and particularly Karl Ritter, the greatest of all German geographers. Ritter himself says:

Pestalozzi knew less of geography than a child in one of our primary schools, yet it was from him that I gained my chief knowledge of this science, for it was in listening to him that I first conceived the idea of the natural method. It was he who opened the way for me and I take pleasure in attributing whatever value my work may possess entirely to him.

It is doubtful whether we should take this statement of Ritter's too seriously. For its parts are contradictory. First he says that Pestalozzi knew very little geography, and then he says that he owes all to him. A fair estimate of the matter would seem to be that Ritter really formed the purpose to make the scientific study and teaching of geography his life-work while under the personal influence and enthusiasm of Pestalozzi, and he felt profoundly grateful to Pestalozzi for helping him to reach this very important decision.

Another reformer, Karl von Raumer (1783–1865), attempted

some experiments in geography-teaching. He was familiar with the theories of Rousseau and wanted to work them out, but he was also directly a follower of Pestalozzi and his method. These experiments of his, then, are tried as the result of his adoption of the theories of both Rousseau and Pestalozzi. Moreover, they represent a direct protest against the kind of geography taught during his time. The inadequacy of place and book geography is pointed out first by means of an imaginary dialogue between two boys, Otto and George, written by von Raumer. Pestalozzi's method of instruction comes into the dialogue, but the gist of it brings out the truth that geography cannot be learned from maps, charts, and merely reading about places. These are wholly inadequate to give correct conceptions of even the primary geographical problems. The only way to learn accurately the type forms in geography is by observation and experience directly connected with the things to be learned. With these theories in mind, von Raumer went to Nuremberg and attempted to put them into practice in his teaching of geography. He says that the experiment was a total failure, due to the fact that the boys did not want to draw the maps, even though the walks around the neighborhood had been very pleasant. He had thought after an accurate observation of the neighborhood the boys would be ready to draw the maps with accuracy and pleasure. Von Raumer concluded that his theory of geographical instruction was wrong, which may have been true in part, but the main cause of the failure is to be found in the fact that the boys were not used to representing their observations by means of drawing. The habit of graphic representation has to be acquired in the same way as other habits, and this habit the boys had not yet acquired. At Erlangen, von Raumer modified his plan somewhat by using the pupils' knowledge of their surroundings as means of introducing them to the study of maps. For example the pupils were handed a large map of the city and told to pick out their own homes, familiar streets, the churches, and other public buildings. This proved a very popular plan. It is easy to see why, for here we have introduced the game element. After the general map was

studied the pupils took a detailed map of the city and studied it in the same way. Then the map of the vicinity of Erlangen, Middle Franconia, Germany, finally Europe, and the world. All of this is place geography, but it was an improvement on the kind which was being taught generally in Germany. Von Raumer comp'ained that the arrangement of the material in the textbooks was very poor, in fact, without any system. He makes a quotation from the favorite manual of Stein, which had gone through fourteen editions, and which was considered one of the best geographies of the time. The quotation is about German mountains and lakes, and is as follows:

> The principal mountains are the Harz (Bracken, 3,945 feet high); Schwarzwald (Feldberg, 4,610 feet); the Rocky Alps, the Rhaetian and Noric Alps (Orteles, or Ortles, 14,814 feet; Grossglockner, 11,982 feet; Hochhorn, 10,667 feet; Platey-Kugel, 9,748 feet; Watzman, 9,150 feet; the Carinic and Julian Alps (Terglon, 10,845 feet); the Fichtelgebirge, the Schneeberge, 3,468 feet; the Kahlenberg the Birnbaumerwald, the Sudetic Alps, and Riesengebirge (Riesenkoppe, 4,950 feet); the Moravian Mountains (Spieglitzer, Schneeberg, 4,280 feet); part of the Carpathian, connected by low heights with the Moravian and Sudetic chains, the Thuringian Mountains, the Erzgebirge, the Spessart, the Rhone mountains, the Böhmerwald (Rachel, 3,904 feet, Arber, 4,500 feet); the Wesergebirge, Westerwald, Odenwald, Ardennes, Vosges, Hundsrück, etc. Lakes: Lake of Constance (7 miles long, 3 miles broad, and more than three hundred fathoms deep), Chiemsee, Lake of Cerknitz, the salt and sweet Lake of Mansfeld, the Lakes of Mecklenburg, Brandenburg, and Pomerania, the Drümmersee, the Trinnstätter and Hallstatter in Archducal Austria. The Steinhunder Lake.[7]

It would be impossible to find a better example of complete confusion than the above quotation, and yet, an examination of the textbooks of the time fully warrants von Raumer's criticism. More than that, it verifies the fact that the quotation fully represents material found in the textbooks of his time. He makes another point against them, namely, that it is impossible to tell important facts from relatively unimportant ones, as they are all put together without any regard to value. Indeed, in many cases unimportant facts are mentioned and the more important ones left out entirely. For example, in the description of Cologne

reference is made to the perfume manufactured there but no mention is made of the cathedral. This was the state of geography-teaching in Europe as late as 1831 when von Raumer wrote his *Manual of General Geography* in which he tried to remedy some of the deficiencies of the books just mentioned. In the main, this new textbook follows the plan outlined and first used at Erlangen. To complete the reform he adds his second book, *The Description of the Earth's Surface,* etc. This last was a book for beginners. It seems, however, that these new books did not affect practice to any considerable extent. The reason for this is that they overlap the period of Ritter's work and influence.

Our discussion has related mainly to Swiss and German reformers and the practice in these two countries. It is not necessary to discuss the other countries of Europe since they all lag some years behind the progress of Switzerland and Germany in the study and teaching of geography, and it may be added in the whole matter of the development of educational methods. The only proof necessary for the above statement is to cite the fact that practically all the nations of Europe sent students to visit Pestalozzi's school at Yverdun, Fellenburg's school at Hofwyl, and the other experimental schools being conducted in Germany. Krüsi tells us that France, Spain, Russia, England, and even the United States sent students to study in these schools. The theories and methods, to be sure, did not affect France much till after the Franco-Prussian war. Spain and Russia were not affected at all because of the interference of the home governments. In England we find three of Pestalozzi's pupils, namely, Dr. Mayo, Reiner, and Herman Krüsi, Jr., trying to carry out the Pestalozzian methods. They first attempted schools on an independent basis, but later, in 1836, under the patronage of the Home and Colonial Society. A training school was established at Gray's Inn Road and another at Battersea near London. The only thing of note in connection with these schools in the matter of geography-study was the "Lessons on Objects" in which the pupils studied the schoolroom, the school premises and buildings, and, finally, took excursions

into the surrounding fields as a means of securing interest. It should be noted, however, that these are only training schools for teachers and the whole number of England's schools was influenced very slightly by them.[8]

It is easy to understand the reason for Germany's great progress in the matter of methods in her schools, for this was just after Fichte's great address to the German nation when she had been crushed by the Napoleonic wars. Fichte urges the government to turn its attention to the schools as a means of redeeming Germany. His advice was accepted, and all the world knows the results both in so far as the schools are concerned and the nation's reconstruction.

2. *Physiographical Geography and Its Human Relations*

This type of geography was brought into scientific form by the world's most eminent geographer, Karl Ritter (1779–1859). Ritter was fortunate both in his teachers and his friends. Among his teachers he had the great Salzman at the famous Schnepfenthal school for eleven years. Both the school and its surroundings on the border of the Thuringian Forest made a profound impression on his character. Here he learned to love all primitive nature-forms. His course of study was in the modern languages rather than in the ancient, being altogether of a practical sort. At the close of his stay with Salzman fortune again favored him, for Herr Hollweg, a rich merchant at Frankfort-on-the-Main, selected him as tutor for his two sons and sent him to the University of Halle for two years. During his stay at the university he had the good fortune to live in the home of Niemeyer, one of the most distinguished professors of the university and also one of the most successful educators of the time. Niemeyer was not only a successful teacher, but was interested in the fundamental principles which underlie education and had published a treatise on the art of teaching. Consequently, young Ritter was daily under the influence of a real teacher and it seems natural that he should adopt the profession of teaching. As soon as he finished his studies at the university, he took up his duties as tutor for Herr Hollweg's two sons at Frankfort. This city was one of

the centers of wealth and cu'ture in Germany and his position as tutor in the Hollweg family at once gave him entré into the best society of the city. More than that, he retained the friendship of the Hollweg family throughout his life. One of the sons afterward became a colleague of Ritter in the University of Berlin. While still acting as tutor to the Hollweg children he made a visit to Switzerland, taking the children with him. On this first trip he spent seven days with Pestalozzi at Yverdun. He says these were seven days of supreme enjoyment, and this was the beginning of a friendship which lasted throughout the life of Pestalozzi. Each time Ritter went to Switzerland on one of his excursions he would spend some time with his friend. We have already referred to the influence Ritter attributed to Pestalozzi in the matter of inspiring him to take up the study and teaching of geography. One other friend should be mentioned, Alexander von Humboldt (1769–1859), whom he met for the first time in Frankfort soon after his first visit to Switzerland, which occurred in 1811. It is not possible to estimate the value of this friendship to Ritter, for von Humboldt was the greatest and broadest scientist of his generation. He was interested in science generally but particularly in geology, natural history, and geography. Undoubtedly, Ritter learned much about geography from this great scientist, and it is not too much to say that from von Humboldt came a large share of insight which helped Ritter finally to become the world's first scientific geographer.[9]

Another thing helps to account for the equipment which made possible the career of Ritter. After his first journey to Switzerland in 1811 it was his custom each year to make some journey or journeys to increase his first-hand knowledge about geographical forms and conditions. During these years he made many visits to Switzerland and Italy, also crossed France in all directions; visited Greece, Bulgaria, Hungary, Turkey, Denmark, Austria, Norway, Sweden, England; explored the Pyrenees and visited London, Vienna, and Paris many times. No doubt the reflex influence of these visits upon the countries was very great. However, there is no accurate way to estimate it.

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Finally, his opportunity was great, for continental Europe was just beginning to settle down after the Napoleonic wars when he began his career. The conditions in Europe were ripe for the construction of new theories about science, and the study of geography conformed to the spirit of the times.

The real teaching career of Ritter began with his appointment as *"professor extraordinarius"* of geography in the University of Berlin in 1820, which position he continued to occupy till his death. The professorship itself is unique, for it is virtually the first time that geography is put on such a basis in the curriculum of the modern university. Ritter began his work with no hearers at the opening of the course and only a very few at its close. However, before three years, his lecture-room was full and he continued to be one of the most popular lecturers at the university throughout his life. At the very beginning of his teaching he worked out his theories of geography on a thoroughly scientific basis, and so carefully was this done that it won for him the distinction of being called the founder of modern scientific geography. The limits of this paper will allow only a brief statement of his fundamental principles. They may be summarized as follows: (1) Physiography is the real basis of geography; (2) the earth is the arena for the development of human life and history; (3) man and his education are the center of interest in geography and all other factors cluster around his destiny; (4) earth-forms do not come by accident, they are the result of an all-wise plan; (5) the country affects the life of the people; (6) God and his laws are behind the development of the earth as the home for man; (7) geography as a science has for its problems the discovery of these laws of the earth's evolution and the proper appropriation of the earth's resources for the greatest possible development of the human race. [10, 11]

With these principles as a working-basis, geography is no longer a great body of unrelated facts but becomes at once a fund of living material which includes the whole history of the development of the human race, and such was Ritter's thought. Nature and man in interaction—these are with Ritter

inseparable. Consequently, he does not try to separate history and geography. This conception no doubt accounts for the fact that in most European countries even to the present time we find the two subjects being taught together.[12] This is particularly true of Germany and Switzerland. By way of parenthesis it might be added that a few of Ritter's followers went entirely over to geology as the controlling factor in man's and nations' destinies. However, this does not represent the real trend of Ritter's thinking.

With reference to method, it is to be noted that Ritter advocated the synthetic, rather than the analytic, type of study. An important device with him was the excursion, which has been adopted by all European countries but is possibly best carried on in Switzerland. Another practice which he advocates is the study of the garden in connection with the school. His theories and the practices growing out of them were adopted by all the states of Europe, not long after the middle of the nineteenth century. France adopted them after the Franco-Prussian War and England somewhat later. It is one of the strange facts of geography-study and -teaching that England, with all of her natural facilities, and interest in travel and exploration, lagged so long behind. As late as 1882 Geikie[13] complains that the subject has not received anything like the attention in England which had been given to it in Germany. However, five years later he reports much progress in the methods of teaching geography in England, due in part to his own books and efforts, but no doubt in large measure also to the establishment of chairs of geography in both Oxford and Cambridge. Geikie adopts the theories of Ritter, as he takes the "earth as the dwelling-place of man" as one of the fundamental theses of his discussion.

3. *Industrial or Economic Geography*

Notwithstanding the great industrial progress of Germany in the last few years the course of study for the elementary school has been very little changed, and in fact it seems fair to say that Ritter's geography still prevails. However, some important changes have taken place in the secondary-school curricula.

Especially is this true of the *Realschule* which was established to meet changing industrial conditions. The same lack of progress appears in Switzerland. In France, Klemm reports that the schools of Paris give considerable time to the discussion of commercial geography. He says, "The railroad system of France and Europe is a subject of much study as could be seen from sketch-maps on the blackboard and from work done by the pupils in their journals."[14] The pupils also draw maps on which are shown the places which grow the grape-vine or olive, and they prepare statistical tables showing a comparison of the principal countries of the world in area, population, armies, navies, their productions, values of exports and imports, tonnage of merchant marine, etc.

At the present time there is a very definite movement in England toward economic geography. This is in a large measure due to the interest which the universities have taken in the matter and particularly the publications which come from Oxford. The Herbertson series of geographies,[15] published at Oxford in 1907, and also *Man and his Work*,[16] published by the Herbertsons, are important factors in the movement. It is interesting to note the subtitle of this last book. It is *An Introduction to Human Geography*, and as we look through the book we see that the whole of geography is to be treated from the human and industrial side rather than from the side of ordinary physiographical geography. In this case physiography has been treated only as a valuable auxiliary to the progress of the race. The textbooks abandon the traditional continental divisions and discuss certain natural, industrial regions, for example the region around the Mediterranean Sea. Here the main consideration is given to the broader economic problems growing out of the region. The books were published only in 1907 and it remains to be seen what influence they will exert on the methods of teaching geography in England.

SOURCES OF QUOTATIONS

1. Monroe, W. S. *Comenius and the Beginning of Educational Reform*, 115–16.
2. Payne. *Rousseau's "Emile,"* 136–39.

3. De Guimps. *Pestalozzi and His Life-Work*, 255.
4. Barnard. *Pestalozzi and His Educational System*, 684.
5. Monroe, W. S. *The Pestalozzian Movement in the United States*, 264.
6. Krüsi. *The Life and Works of Pestalozzi*, 177–78.
7. Barnard. *German Pedagogy*, 117.
8. Krüsi. *The Life and Works of Pestalozzi*, chaps. iii, iv.
9. Gage. *Life of Karl Ritter.*
10. Ritter. *Geographical Studies.*
11. ———. *Comparative Geography.*
12. Russell. *German Higher Schools*, chap. xv.
13. Geikie. *The Teaching of Geography.*
14. Klemm. *European Schools*, 362–63.
15. Herbertson, A. J. "Geography Series" (Vol. I, *Preliminary Geography;* Vol. II, *Junior Geography;* Vol. III, *Senior Geography*).
16. Herbertson, A. J. and T. D. *Man and His Work.*

SOME STOCK AND BOND PROBLEMS

GORDON W. THAYER
University of Cincinnati

The problems which follow are an attempt to apply to the field of stocks and bonds the ideas of Professors D. E. Smith and F. M. McMurry in their well-known paper on "Mathematics in Elementary Schools" (*Teachers' College Record*, March, 1903). There the point is made (p. 6) that problems should be concrete, and that they are concrete only when they deal with actual, significant situations. As an instance of what is meant, a series of problems is given relating to the printers' ink industry in this country and based on the actual facts of this industry's development. Because the problems are real, they possess more interest and are more worth working out than those which are more conventional.

Later (pp. 55–56) the same course is urged for the treatment of stocks and bonds, without, however, definite suggestions. This gap it is hoped to fill by the problems below. These are taken from actual transactions, except that the city is not San Francisco, nor are the other names the genuine ones.

The Consolidated Gas Co. of San Francisco, capitalized at $500,000 (What does this mean?), to which sum $500,000 more was later added (Why? What would be the effects?), sold gas at first at 75 cents a thousand feet; after its additional capitalization at 85 cents a thousand feet. (Why?) Soon the Golden Gate Illuminating Co., a competing corporation, was organized, with a capitalization of $350,000; and charged 75 cents a thousand feet for gas. (What effect would this have on the Consolidated Co.?) The Consolidated retaliated with a 70-cent charge, and was in turn undersold by the Golden Gate Co. This continued till both left their rates at 60 cents a thousand feet, at which figure the Golden Gate Co. was able to pay 4 per cent dividends; and its stock sold at 103. (What does this indicate about the capitalization of the Consolidated Co.? Its original capitalization?)

1. Mr. Charles Black, owner of the *San Francisco Evening Times*, and

a stockholder in the Golden Gate Co., owns 2,550 shares, which he bought at 98 4/5. Which would be better for him, to keep them, or sell them at the market price? What would he get by following either policy? What do the above facts indicate about the fair price of gas in San Francisco?

2. Meanwhile the Consolidated Co. finds it necessary, if it is to meet its expenses, and also pay 4 per cent dividends, to draw $38,000 from its accumulated reserve fund of $106,000. (For what purpose was this fund accumulated? How long can the Consolidated Co. continue to do this? Was it good policy to do it at all, and why? What had the company better do?) Had not this step been made necessary, it was the idea of the president to spend $40,000 from the reserve fund for Government 4's at 106½, due in thirty years. How many could the company have bought? What income would they have netted? Why did they not go on with the scheme?

3. Mr. Black, mentioned above, has 25,000 shares in the Consolidated Co., which he bought at 101 and which would now fetch 87 if sold. (Why this drop?) He has also bought 8,000 additional shares in Golden Gate, at par. How much money has he invested in gas stock? If he were to sell it all, how much money would he gain or lose, as compared with his original purchases? What attitude will his *Evening Times* take when people complain about the service or the rates of the two gas companies?

4. He engineers a merger of the two companies into a new company, the United Gas & Electric Co., with a capitalization of $500,000. (Why was this figure not made larger? or smaller?) This company is to take over the business of its two predecessors. Holders of Consolidated stock are entitled to exchange their shares for United common stock at par; Golden Gate stockholders may exchange their shares for common stock at 96; or for preferred, paying 4 per cent per annum, at 106½. (Why this difference in treatment between the two sets of stockholders?) Which would be better for Mr. Black to do? How much would he get in 2½ years' time, from his preferred-stock dividends?

5. The new company raises the price of gas to 80 cents a thousand feet. (Why?) Common stock jumps thereupon to 108, and preferred to 113½. A 9 per cent dividend is declared on the common stock. Mr. Black then exchanges his preferred stock for common. How many shares does this give him? What will be the amount of his annual dividend?

6. A new issue of capital stock, of $500,000, is now voted by the board of directors. (Why?) Mr. Black buys 1,750 of the new shares at 103. To what do his holdings now amount? The city officials now seek to enforce the new state law against "stock watering." (This term will have been explained during the discussion on the previous issues.) (What attitude will Mr. Black's *Evening Times* take toward this? Why? When the officials come up for re-election, will the *Times* support them or not, and why?) As a result of this action of the officials, the stock drops to

99. (Why?) If Mr. Black should now sell all his stock, what would be his loss?

7. On account of the opposition of the *Evening Times*, the officials are defeated for re-election before their attempt to enforce the law has any results. The price of gas is now raised to 85 cents a thousand feet. (Why?) Common stock now rises to 111, and preferred to 115½. To what would Mr. Black's shares now amount, if sold? What would have been their amount if he had retained his preferred stock?

8. A rival gas company is now organized. (Why?) This, at a capitalization of $350,000 (Why not more?), is promptly bought out by the United Co., the shareholders of the new company being entitled to exchange their shares for a corresponding number of shares in the United Co. at 98; a new stock issue being voted by the United Co.'s directors. (Was this whole procedure good policy on the part of the old company, and why?) Common stock drops to 107¾, and preferred to 112. This is now the sixth year since the organization of the United Co., and it has been paying 9 per cent dividends; now the dividend drops to 5 per cent. Why? How much has Mr. Black made since we first noticed his investments in gas?

9. How do his profits from gas stock compare with those from his newspaper corporation, in which he has 75,000 shares and has received 36 per cent in dividends in the same six years? His newspaper stock was secured by him at 104, and is now worth 122. What would it fetch if sold? What would he clear?

10. Next year a candidate for mayor proposes that the city buy out the United Co. for $1,100,000, guaranteeing 4 per cent dividends to the stockholders for a period of ten years, at which time they would be supposed to have transferred their holdings to other lines of business. How about this proposition, from the point of view of the city? From the point of view of the stockholders? How many shares did the company contain? How many did Mr. Black hold? What would he receive if this proposition were carried into effect? Would this, then, be a good bargain, and why?

11. The candidate proposes *as an alternative* that, if the company will not accept this proposition, the city shall issue bonds (What does this mean? What would be the advantages of raising the money in this way instead of by taxes? What the disadvantages?) to build its own gas works, and furnish gas at cost to the consumers of the city. What will be the effect of this proposition on the value of gas stock? What had the company better do? What attitude will Mr. Black's *Evening Times* take toward this candidate for mayor? Why? Mr. Black finds that, if he wants to sell his shares (Why might he want to sell them?) he must sell at 91. What would be his loss? Had he better sell or wait, and why?

12. The candidate is elected (Why, do you suppose?), and makes the first proposition named above to the gas company with this change: since gas stock has fallen to 86 after the election, the dividend proposition is omitted. (Why?) What had Mr. Black and his friends better do? What will sale on these terms bring him? what about waiting for developments?

13. Mr. Black sells out on the city's terms, and invests the proceeds in Artificial Ice Stock at 102½. How many shares can he get? Will the policy of the *Evening Times* on the gas question be affected by his action, and how? The other stockholders sell out, and the city takes over the business. What will be the probable effect in this case on the price of gas to the consumers?

AGRICULTURAL EDUCATION: NATIONAL EDUCATION ASSOCIATION—STATE AND OTHER TEACHERS' ASSOCIATIONS

BENJAMIN MARSHALL DAVIS
Miami University

It is said of the National Education Association that it "has been, and is now the body-guard of public-school instruction in our country." While this statement may not be taken literally, the fact remains that this Association is the one educational organization which is truly national in character, embracing as it does the interests of all parts of the country and all phases of education.

It was organized in Philadelphia on August 26, 1857, under the name of the National Teachers' Association by a group of teachers who met in response to a call sent out the previous year to all the local teachers' associations. The call itself is significant, for it expresses the spirit which has, on the whole, been manifest during the entire existence of the Association: to teachers of the United States "who are willing to unite in a general effort to promote the general welfare of our country by concentrating the wisdom and power of numerous minds, and by distributing among all the accumulated experiences of all" (57).[1]

The name was changed in 1870 to the National Educational Association and in 1907 to the one it now bears. As made to meet the demands of a natural growth but it has never departed from the essential principles on which it was founded. The extent to which the "accumulated experiences of all" have been "distributed among all" may be seen by a reference to the published list of titles of papers and discussions from 1857 to 1907. This list covers over seventy pages and embraces almost

[1] Figures refer to bibliography at end of article or to bibliographies in previous numbers of this series.

every imaginable subject of educational interest (58). Many discussions are of only passing importance; some are but means of exploiting favorite theories; others are real contributions to educational thought.

Beyond the propaganda which is expected of any large educational body the most valuable work of the Association has been through its committees which have been appointed from time to time to investigate and report upon various important questions of general interest.

The Association being a sort of clearing-house for educational ideas, its published *Proceedings* provide a valuable source of information concerning all kinds of tendencies and movements in education. Agricultural education has received a share of attention proportional to the different stages of its development. The interest of the Association in this subject as reflected in the *Proceedings* extends over four periods: the first from 1857 to 1897, the second from 1897 to 1903, the third from 1903 to 1906, and the fourth from 1906 to the present time.

Agriculture was not considered as a separate subject except as referring to agricultural colleges until the latter part of the first period. Industrial education, however, was discussed as early as 1866. In 1875 a Department of Industrial Education was formed. At this meeting the question: "Can Elements of Industrial Education be Introduced into our Common Schools?" was discussed in a paper by John D. Philbrook. He said: "Science and art with reference to their special application to industrial pursuits must be included in the modern school course." Drawing, geometry, natural history, physics, and chemistry were mentioned as the branches which lie at the foundation of industrial education.

At the meeting of the following year (1876) William T. Harris in his report as chairman of committee on "Course of Study from Primary School to University" refers to the difficulty of deciding "the amount of prominence to be given to industrial branches in comparison with those chiefly productive of theoretical culture." He says also: "The primary school has

been called upon to fit for life." In the course of study reported by the committee for the district schools, topics relating to nature are suggested as follows: "Inorganic—arithmetic, oral lessons in natural philosophy; organic—geography, oral lessons in natural history."

These two references to the early discussions of industrial education are given to show that the need of such instruction was being considered at this time, and from a somewhat general viewpoint which might include agriculture although it was not specifically mentioned. The Department of Industrial Education, however, gave its attention almost wholly to urban conditions. Drawing and manual training held prominent places in the discussions of all the meetings. In 1890 the name of the Department was very properly changed to Industrial and Manual Training, and in 1899 to Manual Training.

In 1893, at the International Congress of Education held under the auspices of the Association, agriculture had a place on the program (59) but the paper was read by a Russian and not an American. Perhaps his account of the use of agriculture in the rural schools as a school subject had something to do with directing the attention of the Association to the rural-school problem. At any rate, at the meeting of 1895 a committee of twelve was appointed to investigate and report upon rural schools as to maintenance, supervision, supply of teachers, and instruction and discipline.

The report was submitted to the meeting of 1897. It contains a number of suggestions which involve more or less agricultural instruction such as surface features of the earth including soils, weather, plant and animal life, etc. It also emphasizes the need of a course of study "framed with direct reference to actual conditions that prevail in country life and in large measure determine it. Among the most important points to be kept in mind are the following: (1) There is a general lack of appreciation of immediate surroundings; (2) there is an almost total lack of scientific skill in farm work; (3) in the country there is a great dearth of social life." Under (2) certain phases of mechanics, manual training, biology, meteorology and physics

of the atmosphere, mineralogy, and chemistry were included. Another portion of the report is devoted to the "farm as the center of interest," and a great many things which we now find in all textbooks on elementary agriculture are mentioned (60).

During the latter part of the second period (1897–1903) agriculture appeared as a topic for discussion at nearly every meeting. At the meeting of 1902 five papers were read as follows: "The Value of a Large Agricultural School in Indian Service"; "Correlation of Schoolroom and Farm Work"; "The Education of the American Farmer"; "The Practical Value of Teaching Agriculture in the Public Schools"; "The Teaching of Agriculture with Reference to Future Employment."

In 1903 a committee on "Industrial Education in Schools for Rural Communities" was appointed. The committee made its report at the meeting of 1905 and represents the most important contribution of the Association to agricultural education in the third period (1903–6). A considerable part of the report deals with agricultural subjects and their adaptation to elementary and secondary rural schools. Among the recommendations of the committee are the following: "A modification of the course of study should be made for the introduction of work, especially in the elements of agriculture and domestic science, and such further lines of industrial education as local conditions make feasible. . . . . The establishment of schools distinctly industrial (agricultural high schools) in their character is absolutely necessary for the proper development and organization of the rural-school system."

A detailed course of study for all the grades is submitted. It is an interesting contrast to the course of study reported by the Committee of Twelve of 1897. In the latter the idea that agricultural subjects should receive attention in the rural schools is suggested rather than definitely stated and outlined. In the former this idea is expressed in a definite and concrete outline with illustrative lessons.

The work in agriculture for the secondary schools is particularly well outlined, and illustrated by accounts of work actually carried on in two existing agricultural high schools: one the

Dunn County (Wisconsin) School of Agriculture and Domestic Economy; the other, the Minnesota Agricultural High School connected with the Agricultural College of Minnesota (61).

The fourth period is characterized by a more active interest in agricultural education. Three important steps were taken: (*a*) continuation of Committee on Industrial Education in Schools for Rural Communities; (*b*) formation of National Committee on Agricultural Education; (*c*) organization of a Department of Rural and Agricultural Education.

The Committee on Industrial Education for Schools of Rural Communities made two reports, one at the meeting of the Association in 1907 and the other at the meeting of 1908.

In some preliminary investigation for the supp'ementary report the correspondence showed that "what was most wanted was a definite statement of what was actually being done in different parts of the country in providing facilities for industrial education in rural communities." The supplementary report represents the efforts of the committee to satisfy this demand. It consists of three parts: a discussion of the general problem, including school buildings, school gardens, manual training, nationalizing the work (referring to the Davis bill then before Congress) and in what schools agriculture should be taught; industrial work in New England, New Jersey, Pennsylvania, and New York; experiences and opinions of individual teachers in the preceding territory (62).

The second report (1908) is limited to "a presentation of what is being done in schools representing four types of organization, as showing the possibilities in other schools of these types and the conditions under which these possibilities may become actualities." The schools selected and reported upon are the Waterford High School, at Waterford, Pa., the Cecil County High School, at Calvert, Md., the John Swaney Conso'idated School, in Magnolia Township, Putnam County, Ill., and the congressional district agricultural schools located at Americus and Monroe, Ga. Each type is described in sufficient detail to give a clear understanding of its organization and actual work.

The final conclusions of the Committee are summed up in

nine paragraphs, two of which should be quoted here since they refer to conditions that continue to exist:

> That the supply of properly trained teachers for carrying on this work is totally inadequate to meet even the present demand, and that the increase in the demand for such teachers in the near future requires a very large increase in the facilities for their preparation, and to supply these facilities special training schools should be established throughout the country for the preparation of elementary rural-school teachers; that the normal schools whose graduates find positions in rural schools should broaden and strengthen in every way their courses of instruction along industrial lines adapted to the needs of rural schools; that the agricultural colleges favorably situated for such work should undertake to organize special courses for the purpose of training teachers for the secondary schools, capable of giving instruction in agriculture and related subjects.
>
> That in the growth of public sentiment, in the development of ideals, in the preparation of courses of study, and in the facilities for the training of teachers for industrial work in rural schools, decided progress has been made in recent years; but that much yet remains to be done before the importance and value of this kind of industrial education shall be fully appreciated by all concerned, and before it shall receive its appropriate recognition and find its proper place in our educational system (63).

In 1906 a call was sent out to members of the Association who were interested in agricultural education to be present at the annual meeting of the Department of Superintendence for the purpose of discussing various problems concerning this subject. There was an encouraging response and an interesting meeting was held. At this meeting the National Committee on Agricultural Education was formed. Through the efforts of this committee an application for the privilege of organizing a Department of Rural and Agricultural Education was presented to the Board of Directors of the Association, and favorably acted upon July 8, 1907 (63).

The second conference of this committee was held at the meeting of the Association of 1907. At this session three important papers were read and discussed: "The Work of the National Government in Extending Agricultural Education through the Public Schools"; "What Has Been Done and Is Being Done by Normal Schools and Agricultural Schools for Popular Education in Agriculture" (64); "The Work in Agriculture as Conducted

by State and County Organizations of Young People in Club Contests." The third conference of the committee was held at the meeting of the Department of Superintendence held at Washington in 1908. Just at this time the Davis bill (24) and the Burkett bill (24) were being considered as separate measures. Under the direction of the National Committee on Agricultural Education a conference was held with all parties interested in the two measures, resulting in the introduction in Congress of a new bill embodying the essential features of the two separate ones. A subcommittee conferred with the President of the United States, and also with the Senate Committee on Agriculture in behalf of national aid for agricultural instruction.

The fourth and fifth conferences of the committee were held at the meetings of the Department of Superintendence of 1909 and 1910. At the fourth session two committees were appointed, and reports were made at the fifth session. These were on "Credit Value of High-School Agriculture for College Entrance" and "The Course of Study in Agriculture—What Shall It Be?"

Two regular meetings of the Department of Rural and Agricultural Education have been held (in 1908 and 1909). As they are fully reported in the *Proceedings* of the Association no further reference need be made here, except to state that they were well attended and much interest was shown in the discussions. An excellent program has already been prepared for the meeting of 1910. One session promises to be of especial interest, as it is to be held jointly with the departments of Secondary Education and of Science to consider the "Practical Aspects of Science in Secondary Education with Special Reference to Introducing Materials from Agriculture, Household Arts, Technical Industries, Sanitation, etc."

It will be seen from the foregoing account that the National Education Association has been and is an important factor in agricultural education, first in the way of propaganda, by bringing the subject prominently before the teachers of the entire country, and second by real constructive work through its committees and its Department of Rural and Agricu'tural Education.

Through the published *Proceedings* of the Association the

development of the movement for agricultural education can be followed as in no other educational literature excepting that of the National Government through its publications of the Department of Agriculture and of the Bureau of Education.

STATE AND INTERSTATE TEACHERS' ASSOCIATIONS

There are about seventy of these associations. Some were in existence long before the organization of the National Teachers' Association. Most of them publish proceedings of their meetings, but for lack of funds and other causes accounts of these meetings are not always published except in local papers. Enough of these proceedings, however, are available in published form to trace any educational movement as reflected by the discussions of these meetings. One finds that agricultural education began to receive attention from these associations about the same time that the National Education Association became actively interested in it. We find, for example, the Alabama Educational Association in 1905 devoting a considerable part of its program to the subject, and calling W. M. Hays to give an address; the California State Teachers' Association in 1905 holding joint sessions with the State Farmers' Institute, and calling L. D. Harvey and A. C. True to make addresses; the Georgia Teachers' Association in its meetings of 1903, 1906, 1907, and 1908 giving prominence to the subject, in 1908 holding a conference with representative business men from forty-four of the fifty counties of the state concerning the district agricultural high schools. These illustrations are typical of the consideration given agricultural education by most of these associations at their recent meetings. Their contribution consists chiefly in creating an interest in the subject. Sometimes, however, movements are started that result in state legislation.

It is not possible in the limits of this paper to enter into further discussion of the work of these associations, instructive as it might be to follow careful'y the development of agricultural education as expressed by these bodies of teachers in various sections of the country.

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59. "Should Rural Schools Introduce Agriculture, Chemistry, Agricultural Botany, or Arboriculture?" ERGRAFF DE KOVALEVSKY. *Ibid.* (1893), 304–7.

The writer concludes that "instruction in the rural schools can and should have an agricultural bearing."

60. "Report of the Committee of Twelve on Rural Schools." *Ibid.* (1897), pp. 385–582.

This is probably the most complete and important contribution of rural schools in American educational literature up to the date of its publication. Besides a full discussion of the four phases of the subject there are nineteen appendices devoted to such subjects as transportation of pupils, enrichment of the rural-school course, the rural-school problem, the course of study, the farm as a center of interest, etc.

61. *Report of the Committee on Industrial Education in Schools for Rural Communities.* Publications of National Educational Association: Report of Special Committee (1905), 87.

This report contains argument for industrial work, scope of work, statements of what kind of work was being done in the different types of schools in which a beginning in industrial education had been made, and the desirability of a new type of secondary school of distinctively industrial character and adapted to the needs of rural communities.

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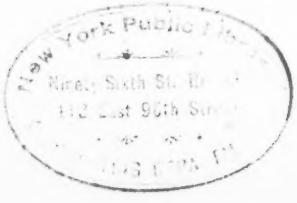

EDITORIAL NOTES

Summer-School Plans

The season has arrived when teachers are beginning to arrange their plans for the summer vacation. Fortunately these plans are coming to include in ever-increasing degree some kind of study which shall augment the efficiency of the subsequent year's work. When the first summer schools were opened there were misgivings in the minds of many as to the wisdom of summer study on the part of teachers; there were undoubtedly mistakes of overzealousness which justified some of these misgivings. With the accumulation of experience, however, the most skeptical must be convinced, for in all parts of the country there come together a great number of teachers and they derive benefits of such undoubted advantage that there is a steady increase in the demand for such opportunities.

An Important By-Product

It is not alone the teachers who derive advantages from summer schools; the institutions which carry on the work profit greatly by contact with the summer constituency. No plan could possibly have been devised which would have operated more successfully than does the summer school to keep universities and schools of all other grades in closest contact. A university teacher of history or science or English working with college students or even with ordinary graduate students may get out of touch with what is actually developing in the surrounding schools; but this same university teacher before his summer class can never lose sight of the school problem. He will be plied with questions fresh from the classroom of the schools; he will be called to book very promptly if he indulges in any unwarranted speculations about the way in which subjects should be presented. On the other side the teacher in the schools does not need to deal at long range through books with the best authorities; the teacher of geography or history or drawing can find some institution which puts him

into direct contact with leading authorities. These institutional contacts can be called by-products of the main work of the summer school, which is the training of the individual teacher, but from a larger view they are to be regarded as of prime importance.

The purpose of the present editorial is, however, not mere comment on the value of summer-school courses. There are certain questions which are constantly being turned over in the minds of prospective summer students on which it may not be out of place to offer the light of institutional experience. Most students want to take more courses than they can pursue with profit. Better a single course well assimilated than many courses hastily skimmed. Better a limit of two or at most three, than an open temptation to get all one can crowd into the day. Someone has described a summer-school student as a person so eager for credits that he cannot stop to get an education. There is another type of student who tries to do too much, namely the student who at great sacrifice has reached the institution for perhaps the only summer that he can afford in a long period of years. With all due regard to the importance of credits and the value of an opportunity when one is on the ground, let the warning be clear and emphatic: take few courses and do them thoroughly.

Few Courses Well Done rather than Many Courses

A second important question is, What kind of courses shall one take? There are always courses of a so-called professional character which deal with the theory or philosophy of education or with methods or with educational psychology. On the other side there are courses in subject-matter such as courses in geography, mathematics, manual arts, and reading. Shall one take professional courses or courses in subject-matter? There can be no doubt that the necessity of preparing for examinations of one sort or another has given the professional courses some advantage. On the other hand, there can be no doubt that what most teachers need is subject-matter. Many a teacher is misled by someone's advice into a course in educational psychology when what he or she needs is a good course in plane

Professional Courses and Subject-Matter Courses

geometry or elementary geography. There are some students at summer school who will not take anything but advanced courses when what they need is elementary courses. There should be much greater care in the selection of courses. If one's superintendent or principal suggests a summer at this or that institution, let the student canvass the matter carefully before he goes, let him select the courses which he needs, not those which will exhibit the greatest devotion to advanced theory. Summer-school students with their own experience in teaching to guide them ought to be very judicious in the selection of their courses; the fact is that they very often are not at all judicious.

Visiting Courses

A third matter on which comment certainly needs to be made is the matter of visiting courses in which one does not do the reading or written work or take the examination. Such visiting is usually related to the mistake referred to in the paragraph above on undertaking too many courses. The theory of such visiting is that one can pick up without much effort, in a fashion suitable to vacation, some information and some culture. Possibly in some rare cases benefit is derived from visiting. How a teacher of experience can sanction in his or her own person this utterly unpedagogical method of attaching oneself to culture is difficult to understand. There is no such thing as passive reception of knowledge. Any teacher young enough to go to summer school is not too old to acquire bad habits of mind by indulgence in visiting. The cure for visiting is to take one course and do it well. The value of this one course will be not merely the knowledge gained, but also the taste for real acquisition.

Careful Planning before Registering

The purpose of this editorial will be served if it leads its readers to plan in advance the work which many of them will undertake this summer. It is astonishing to see how unformed are the plans of many who come to summer schools. Consultation at home with one's associates, consultation by letter with the university which one is to attend, consideration of one's own need before starting, these are the lines of preparation which these paragraphs are intended to suggest.

York Public Library
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BOOK REVIEWS

Methods of Teaching Developed from a Functional Point of View. By W. W. CHARTERS. Chicago: Row, Peterson & Co. Pp. 255. $1.10.

To a considerable extent this book is a formulation of methods of teaching in terms of Dewey's theory of education. This is in striking contrast with the method books based on the Herbartian formula, namely the books of McMurray, DeGarmo, and various English writers. This tendency to adopt some unifying principle, which is lacking in such books as Thorndike's *Principles of Teaching,* is very helpful for some students, and to such Charters' book will appeal. To students of Dewey the following ideas which are prominent in the book will be familiar:

"The aim of education is to assist pupils to appreciate and control the values of life. Subject-matter arises in response to failure or breakdown in old ways of acting; it is invoked to satisfy needs or desires or to solve problems. The intrinsic function of subject-matter is its function in life without reference to its utility in the school. The attention of pupils for the major part of the time should be directed upon these intrinsic functions. Each unit of subject-matter should be definitely organized from the standpoint of its intrinsic function."

This fundamental discussion of subject-matter occupies one-third of the book. Over a third of this part is devoted to concrete examples from composition, literature, arithmetic, history, etc.

"The securing of motives, education's greatest problem," occupies about one-fifth of the book. The central thought is again the Dewey notion of getting the pupil into a situation where he is conscious of a lack or need which he formulates and attacks as a personal problem to be solved. Two-fifths of this discussion is an elaboration of examples from English, arithmetic, and history. The remaining chapters are, "Review of Past Experience," "Control of Values," "Forms of Instruction," "Methods of Development," "Psychological and Logical Organizations," "Methods of Securing Realness," "Drill and Application," "The Assignment," "The Lesson Plan."

The outline of main topics noted in the previous paragraph is admirable. It suggests vividly certain topics which are neglected or subordinated in the Herbartian formula, and it is better for the non-technical student than the psychological terminology used in some method books. But much of the good promise of the chapter-headings is not realized in the text. The Dewey material is spun out at great length with a superabundance of concrete examples and with elaborate analysis and subdivision which puzzle the student. On the other hand such important topics as "The Assignment" and "Drill" are given relatively brief treatment with few concrete examples. In a few cases definitions and distinctions are introduced which give the student unnecessary

difficulty, for example, the idea that a unit of subject-matter is a way of acting, and the discussion of explicit, versus implicit, elements in inductive and deductive reasoning.

In general the work represents a valuable departure in textbooks on method and is useful in connection with general-method courses for either elementary- or high-school teachers.

S. Chester Parker

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[1] Abbreviations.—Atlan. Educa. Journ., Atlantic Educational Journal; Cent., Century; Dial, The Dial; Educa., Education; Educa. Bi-mo., Educational Bimonthly; El. School T., Elementary School Teacher; Harp. W., Harper's Weekly; Hist. Teach. Mag., History Teacher's Magazine; Journ. of Educa. Psychol., Journal of Educational Psychology; Lib. Journ., Library Journal; Liv. Age, Living Age; Pop. Educa., Popular Educator; Pop. Sci. Mo., Popular Science Monthly; Prim. Educa., Primary Education; Pub. Lib., Public Libraries; School R., School Review.

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